623.3.06 Quality Acceptance

General Provisions 101 through 150.

623.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

623.4 Measurement

Pneumatically applied concrete placed on slopes or plane areas are measured for payment by the square yard (meter) of accepted surface areas constructed to the neat lines indicated on the Plans or as directed.

Where pneumatically applied concrete is used for patching, grouting, plastering, or build-ups, it is measured by the ton (megagram) of cement actually used.

623.4.01 Limits

General Provisions 101 through 150.

623.5 Payment

Pneumatically applied concrete will be paid for at the Contract Price per square yard (meter) of paving or per ton (megagram) of cement as specified, complete in place. No separate payment will be made for reinforcing steel, joint-filling materials, clean-up, or disposal of rebound.

Payment will be made under:

Item No. 623	Pneumatically applied concrete	Per square yard (meter)
Item No. 623	Pneumatically applied concrete	Per ton (megagram) of cement

623.5.01 Adjustments

General Provisions 101 through 150.

Section 624—Sound Barriers

624.1 General Description

This work includes furnishing and installing a sound barrier according to this Specification and conforming to the locations, dimensions, lines, and grades shown on the Plans.

Unless a specific type is required by the Contract documents, select one of the following barrier types. Identify in the Proposal the type upon which the bid is based.

Type A	Concrete masonry units
Type B	Interlock steel panels
Type C	Precast concrete panels
Type D	Treated timber panels
Type E	Masonry-coated polystyrene reinforced panels
Type F	Glass reinforced thermoset composite structural panels
Type G	Precast autoclaved aerated concrete (PAAC) panels

Schedule construction as specified in the Special Provisions for sequence of operations, the Plans, or as directed by the Engineer.

624.1.01 Definitions

General Provisions 101 through 150.

624.1.02 Related References

A. Standard Specifications

Section 106—Control of Materials

Section 201—Clearing and Grubbing Right-of-Way
Section 205—Roadway Excavation
Section 206—Borrow Excavation
Section 208—Embankments
Section 210—Grading Complete
Section 500—Concrete Structures
Section 520—Piling
Section 700—Grassing
Section 702—Vine, Shrub, and Tree Planting
Section 834—Masonry Materials
Section 865—Manufacturing of Prestressed Concrete Bridge Members
Section 885—Elastomeric Bearing Pads

B. Referenced Documents

GDT 7
GDT 20
GDT 21
GDT 24a
GDT 24b
GDT 59
GDT 67
QPL 42
Section 1717(a) of the Uniform Building Code
ASTM A 653/A 653M and ASTM A 924/A924M
ASTM C 90
ASTM D 2092, Method F
ASTM E 90

624.1.03 Submittals

Have the manufacturer certify to the Department that a specimen of the proposed barrier meets or exceeds a minimum weighted sound transmission loss of 22 dBA. Furnish test results for barrier material types (except Type A and Type C). The transmission or loss results must be based on the generalized truck spectrum when tested according to ASTM E 90 to compute the overall noise barrier transmission loss (TL) using the frequencies and sound levels according to the following table:

Panel Type:

Gage:

Finish:

Frequency Hertz	Truck Spectrum		Receiver Side	
	dB	dBA	TL	Level
31.5	—	—		
40	—	—		
50	72	41.8		
63	69	42.8		
80	79	56.5		
100	86.6	67.5		
125	81.1	65.0		
160	77.9	64.5		
200	83.9	73.0		

Frequency Hertz	Truck Spectrum		Receiver Side	
	dB	dBA	TL	Level
250	82.6	74.0		
315	79.6	71.0		
400	82.3	77.5		
500	81.2	78.0		
630	79.4	77.5		
800	80.8	80.0		
1000	80.0	80.0		
1250	80.4	81.0		
1600	81.0	82.0		
2000	78.3	79.5		
2500	78.2	79.5		
3150	74.8	76.0		
4000	72.0	73.0		
5000	69.5	70.0		
6300	67.6	67.5		
8000	62.1	61.0		
10000	58.0	55.5		
12500	—	—		

$A = 10 \log \sum_{i=1}^{n} 10 \log (i/10)$ for the truck spectrum

$B = 10 \log \sum_{i=1}^{n} 10 \log (i/10)$ for the receiver side

Weighted Transmission Loss = A - B =

Receiver Side Sound Level [dBA] = Truck Spectrum (dBA -TL in Decibels)

Ensure that certification is according to Subsection 106.05.

624.2 Materials

Ensure that other materials not listed herein meet the requirements of the appropriate Specification to which they pertain. For a list of sources, see QPL 42.

A. Type A

Concrete—Class A Hollow Load Bearing Concrete Masonry Units (Concrete Block) ASTM C 90, Grade N-I or N-II	Section 500
Mortar	Section 834

B. Type B

1. Interlocking Steel Panels

   Use cold formed configured steel panels that meet these requirements:

   - Provides friction interlocking with adjacent panels

- Has a male-female rib that provides a friction interlock connection with adjacent panels or is joined adequately according to the manufacturer's specifications
- Is made of 22 gage (0.85 mm) or thicker steel conforming to ASTM A 653/A 653M and ASTM A 924/A924M
- Provides sufficient friction interlock connection strength to support its own weight without using fasteners when connected to another panel and held in a vertical or horizontal position

Use a panel size and shape shown on the Plans or an alternate approved by the Engineer.

Coat (galvanize) the panels with a G90 (Z275) weight of zinc according to ASTM A 525 (A 525 M).

2. Protective Color Coating

   Use one of the following coatings:

   a. System A—The coating is polyvinylidene fluoride (70 percent resin, minimum enamel, PVF2).
      1) Apply the coating system (including primer) at a total minimum film thickness of 1 mil (0.03 mm) per coated side.
      2) Cure the polyvinylidene fluoride film to at least 0.8 mil (0.02 mm) film thickness.

   b. System B—The coating is polyvinyl fluoride plastic film (PVF1) and has a thickness of at least 1.5 mils (0.04 mm) coated on both sides.
      1) Have the coating applied at the factory to thoroughly cleaned and pretreated galvanized steel according to ASTM D 2092, Method F.
      2) Laminate the coating to the galvanized steel using heat and adhesive to form a uniform and durable coating pigmented to obtain optimum color performance.
      3) Use a color from the Federal Standard Color Number indicated on the Plans. Ensure that caulking is color pigmented to match the wall color specified.

3. Post

   Use a post for steel walls with these features:

   - Hot rolled sheet conforming to ASTM A 36 (A 36 M)
   - Hot-dip galvanized according to ASTM A 123 (A 123 M)
   - Coating that weighs at least 2 ounces/ft^2 (610 g/m^2) on all sides

4. Steel Flashing and Caps

   Use flashing and caps for steel walls that are the same material and color coating as the panels.

5. Self-Drilling Screws (Steelwalls)

   Ensure that A-1 screws are Class #410 Stainless Steel and conform to Federal Specification QQ-S-763-C, or are cadmium coated according to ASTM A 165.

C. Type C

Use precast concrete panels that meet these requirements:

Class AA Concrete	Section 500
Reinforcing	AASHTO M 31 and M 32
Piling-Weathering Steel	ASTM A 588
Piling-Galvanized Steel	Section 520 and AASHTO M 111
Elastomeric Bearing Pads	Section 885

Use piling, bolts, and fittings that are hot-dip galvanized when the barrier rests on another concrete structure.

D. Type D

Use treated timber panels that meet these requirements:

Type D.1	See Plan Detail D-1
Type D.2	See Plan Detail D-2

Class A Concrete	Section 500
Bolts and Washers	Plan Details
Pile	Plan Details

E. Type E

1. Wire. Use No. 14 gauge panel wire that conforms to ASTM A 82 and to ASTM A 185 as a welded steel wire fabric.
2. Clips. Use No. CL-15G Hartco clips formed from 7/16 in (11 mm) wide, No. 20 gauge cold rolled steel and are manufactured by Hartco Manufacturing Company.
3. Expanded Polystyrene. Use foam with a density of 1 to 1.5 lbs/ft³ (16 to 24 kg/m³). Use beads produced by BASF Wyandotte BF-Styropor (Research Report No. 3401) or American Hoechst Corporation Fostafoam, Type 86 Series (Research Report No. 3504), and that comply with Section 1717(a) of the Uniform Building Code.
4. Polyurethane. Use foam assembled as filler that is 2.25 in (57 mm) thick with a density of at least 1 lb/ft³ (16 kg/m³).
5. Portland cement. Use cement that complies with AASHTO M 85.
6. Aggregate. Use natural plaster sand that complies with ASTM C 144.
7. Plaster. Use a mixture of Portland cement and aggregate that complies with Table No. 47-F of the Uniform Building Code.

   Ensure that the plaster has a minimum 28-day compressive strength of 1,000 psi (7 MPa) or greater, as required by design based on testing three 2 in (50 mm) cubes

F. Type F

1. Structural Plank. Use continuous glass fiber reinforced structural planks that meet these requirements:
   - Are constructed of a durable, UV resistant, flame retardant, thermosetting composite material
   - Are resistant to degradation from ozone, hydrocarbons, and freeze/thaw cycling
   - Match the Federal Standard Color Number indicated on the Plans
   - Meet the following minimum mechanical properties:

PROPERTY	MINIMUM VALUE	TEST METHOD
Flexural Modulus	2,200,000 psi (15 200 MPa)	ASTM D 790
Flexural Strength	70,000 psi (480 MPa)	ASTM D 790
Tensile Strength	65,000 psi (450 MPa)	ASTM D 638
Tensile Modulus	4,500,000 psi (31 000 MPa)	ASTM D 638
Elongation	1.5 %	ASTM D 638
Compressive Strength	60,000 psi (410 MPa)	ASTM D 695
Barcol Hardness	50	ASTM D 2583
Specific Gravity	1.86	ASTM D 792

2. Filler. Use either hollow structural planks or planks filled with a recycled tire rubber compound comprised of sorted and graded ground tire rubber (0.25 ± 0.025 inch (6.4 ± 0.6 mm)).
3. Flashing and Caps. Use flashing and caps of the same material and color as the panels.
4. Caulking. Use caulking that is color pigmented to match the wall color specified.
5. Posts. Use posts fabricated from hot rolled sheet conforming to ASTM A 36 (A 36 M), and hot dip galvanized in accordance with ASTM A 123/A123M, except coating weight shall be a minimum of 2.0 oz/ft^2 (600 g/m^2) on all sides.
6. Other Materials. Use materials that meet the requirements of the appropriate Section in the Standard Specifications to which they pertain.

G. Type G

1. Precast Autoclaved Aerated Concrete (PAAC) Wall Units. Use PAAC wall units cast from a mixture of Portland cement, fine aggregate, water, gypsum, lime, and an expansion agent. After setting, and before hardening, the PAAC is machine cut to the required size, then steam-cured under pressure in an autoclave. Use PAAC that meets the following physical requirements:
    - Has a minimum average compressive strength of 725 psi (5000 kPa) when three specimens are tested in accordance with ASTM C 1386, with no single specimen having a compressive strength of less than 580 psi (4000 kPa).
    - Has a maximum shrinkage of 0.02% when tested in accordance with ASTM C 1386
    - Has a dry bulk density between 34 (544 kg/m^3) and 41 lb/ft^3 (656 kg/m^3)when tested in accordance with ASTM C 1386
2. Reinforcing. Use reinforcing that conforms to AASHTO M31 or M32.
3. Galvanized Steel Supports. Use supports that conform to Drawing No. H2 as shown on the Plans, with the distance between wall supports no greater than 10 feet (3 meters) on center.
4. Welds. Use welds conforming to Drawing No. H2.1 as shown on the Plans.
5. Coatings. Use only approved coating systems on all exposed surfaces, including steel supports. Use the same topcoat color on both the PAAC panels and the steel supports. Submit independent laboratory test results for 1500 hours of accelerated weathering in accordance with ASTM G 53. Submit results that show ratings of at least 9 in the following categories: color change, chalking, checking, cracking, blistering, flaking and rusting. Submit a certification stating that the PAAC topcoat is graffiti resistant.

624.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

624.3 Construction Requirements

624.3.01 Personnel

General Provisions 101 through 150.

624.3.02 Equipment

General Provisions 101 through 150.

624.3.03 Preparation

General Provisions 101 through 150.

624.3.04 Fabrication

General Provisions 101 through 150.

624.3.05 Construction

Perform the following work according to the Specifications:

A. Clearing and Grubbing

When necessary, clear and grub according to Section 201 as applicable.

B. Excavation, Borrow, Embankment

Perform excavation, borrow, and embankment according to Section 205,
Section 206, Section 208, or Section 210. The scope and dimensions of the work are shown on the Plans.

C. Grassing

Perform grassing according to Section 700, as specified on the Plans.

D. Vine, Shrub, and Tree Planting

Plant vine, shrub, and trees according to Section 702 as specified on the Plans.

E. Miscellaneous Construction Items

When items are shown on the Plans but are not covered in this Specification, the Plans and Standard Specifications govern the work.

F. Walls

Follow these requirements to construct each type of wall:

1. Type A Wall

   When using hollow load bearing concrete masonry units (concrete block) to construct the walls, work according to the notes, details, and dimensions on the Plans, including footings, reinforcement, and plaster coat when required.

2. Type B Wall

   Install steel noise barrier walls according to the manufacturer's recommendations and Plan details.

   Repair cut, scratched, or marred surfaces according to the manufacturer's recommendations.

3. Type C Wall

   When using precast concrete panels:

   a. Cast them in a precasting facility approved by the Engineer.

   b. Have the Engineer determine panel acceptability from the compressive strength of cylinders made and cured the same as the panels, and from inspection during manufacture.

      Have the panel manufacturer furnish facilities and assistance to sample and test quickly and satisfactorily.

   c. Cast the panels on a steel surface with steel side forms.

   d. Place concrete in each panel without interruption. Consolidate the concrete using vibrators supplemented by hand tamping and rodding to force the concrete into the corners of the forms to eliminate stone pockets, cleavage planes, and air bubbles.

   e. Give the panels a Type III—Rubbed Finish on the upper surface (as cast) according to Subsection 500.3.05.AB, "Finish Concrete."

   f. Cure the panels as specified in Subsection 500.3.05.Z.1, "General Curing—Supplying Additional Moisture," (wet cure) long enough for the concrete to develop the specified compressive strength.

      1) Ensure that the curing period is at least 72 hours under normal summer temperature conditions. In colder weather extend the curing period, as directed by the Engineer

      2) Protect the panels from freezing from the time the concrete is placed until curing is complete.

      3) Instead of the wet cure method, steam cure the panels as specified in Subsection 865.2.01.B.2.g.(2) if desired.

   g. Mark each panel with the date cast and the Inspector's approval stamp.

   NOTE: Even with the Inspector's acceptance at the precast yard, panels can still be rejected at the erection point if they are damaged.

   h. Erect the panels according to Plan details and dimensions.

      Place bearing pads as shown in the Plans, and tighten the restraining bolts.

   i. After erection is complete and before Final Acceptance of the Project, clean the sound barrier to remove dirt or stains.

4. Type D Wall

   The Plans shall designate the correct type of D wall (Type D.1 or Type D.2.).

   a. Type D.1 Wall

      Construct this wall of tongue and groove panels placed in a horizontal configuration supported by vertical posts set on concrete piers. Follow the Plan details for information on sizes, timber treatment, and erection.

   b. Type D.2 Wall

      Construct this wall of double wood panels staggered to provide a 1/2-width overlap. The supports are posts set in a concrete footing. Follow the Plans for full details of materials and erection, sizes, and timber treatment.

5. Type E Wall

   See the Plan details.

6. Type F Wall

   Install in accordance with manufacturer's recommendations and Plan details. Do not install walls with burns, discolorations, cracks, or other objectionable marks that would adversely affect the performance of the system.

7. Type G Wall
   a. Cast the PAAC panels in a precasting facility approved by the Engineer.
   b. Have the Engineer determine panel acceptability from the compressive strength of cylinders made and cured the same as the panels, and from inspection during manufacture.

      Have the panel manufacturer furnish facilities and assistance to sample and test quickly and satisfactorily.
   c. Cast the panels on a steel surface with steel side forms.
   d. Place concrete in each panel without interruption. Consolidate the concrete using vibrators supplemented by hand tamping and rodding to force the concrete into the corners of the forms to eliminate stone pockets, cleavage planes, and air bubbles.
   e. After machine cutting to the required size, cure the PAAC units by high-pressure steam autoclaving so that the units meet the physical requirements of Subsection 624.2.G.1.
   f. Mark each panel with the date cast and the Inspector's approval stamp.

      NOTE: Even with the Inspector's acceptance at the precast yard, panels can still be rejected at the erection point if they are damaged.
   g. Erect the panels according to Plan details and dimensions.
   h. After erection is complete and before Final Acceptance of the Project, clean the sound barrier to remove dirt or stains.
   i. Use coatings that are approved by the Laboratory.
      1) PAAC panels. Apply the coating with a sponge-textured roller in accordance with the manufacturer's recommendations. Cover all exposed galvanized steel surfaces for protection from splattering. Apply the coating at a minimum thickness of 60 dry mils (1.5 mm). Apply the coating only when the ambient temperature is greater than 40 ^{o}F (4 ^{o}C) and rising. Do not apply any coating during rainfall or when rainfall is forecast overnight.
      2) Galvanized Steel Supports. Apply a corrosion resistant coating by brush, roller, or airless spray in accordance with the manufacturer's recommendations. Protect the adjacent PAAC surfaces from overspray. Apply the coating at a minimum thickness of 2 dry mils (0.5 mm). Use a color that matches the PAAC final topcoat color. Apply the coating only when the ambient temperature and relative humidity fall within the limits stated by the manufacturer.

8. All Walls

   Before beginning earthwork on the Project, stake the noise barriers in the field and establish the final groundline elevations at the barrier walls.

   Furnish these elevations to the supplier who will develop the shop plans, including a complete elevation view of each barrier indicating top and bottom elevations and the roadway grade.
   a. Protect the final ground elevations established in the field for the duration of the Project. Do not adjust them without the Engineer's approval.
   b. Install sound barriers according to the Plans and Shop Drawings approved by the Engineer.
   c. Secure joints and connections to be structurally sound with no visible openings for sound transmission. Ensure that vibration from metal barriers is not a secondary source of noise transmission.
   d. Repair marred, chipped, scratched, or spalled barrier areas according to the manufacturer's recommendations and as directed by the Engineer at the Contractor's expense.
   e. To substitute welded for fixed-bolt connections or vice versa on metal barriers, meet these conditions:
      - Submit load calculations for the specific connection to be modified.
      - Use a safety factor of at least 3.0.
   f. Place trench backfill for sound barrier construction according to Section 207. Use select material to backfill.

      If the Engineer believes the trench is too narrow for compaction, backfill the trench excavation with concrete grout to the Engineer's satisfaction. No additional compensation will be made for the concrete grout.
   g. Dispose of excess excavation to the Engineer's satisfaction.
   h. Keep right-of-way fence in place that is scheduled to be salvaged until the barrier is constructed, or as long as the Engineer deems practical.

i. After erecting the barrier, leave the disturbed area in a finished condition at the Engineer's direction and plant grass or sod.

j. Payment for establishing grass is described in Subsection 624.4.C, "Grassing."

k. Ensure that the barrier meets these tolerances:

1) Vertical alignment for barriers and posts is:

- 0.5 in (15 mm) for barrier heights to 10 ft (3 m)
- 1 in (25 mm) for barrier heights to 20 ft (6 m)
- 1.5 in (40 mm) for barrier heights to 30 ft (9 m)

2) Horizontal alignment for barriers is close to that shown on roadway Plans.

3) Post spacings are within 0.5 in (15 mm) of their intended location.

l. For sound barriers built on top of earth berms, construct the berms of earthwork fill material and compact to 95% of the maximum density as determined by GDT 7, GDT 24a, GDT 24b or GDT 67, as applicable. Determine in-place density according to GDT 20, GDT 21, or GDT 59, as applicable.

G. Graffiti-Proof Coating

This work includes providing graffiti-proof coating on both faces of concrete and masonry barriers from the ground line to the top of the wall.

1. Materials. Use materials as noted on QPL 42.
2. Delivery and Storage. Ensure that the materials are delivered in manufacturer's original containers with labels intact. Store the materials out of the weather, in a single location, and as specified by the manufacturer.
3. Job Conditions. Protect the coating from the weather and work conditions as follows:
   a. Apply the graffiti-proof coating in weather recommended by the manufacturer.
   b. Mask, cover, or otherwise protect finished adjacent surfaces from damage that work in this Section could cause.
   c. Protect finished coatings from staining, marring, and damages from other trades.
4. Quality Criteria. Use materials that are products of one manufacturer.
   Use application equipment recommended or approved by the coating manufacturer for use on this Project. Use equipment in good operating condition.
5. Application. Ensure that the moisture content of surfaces to receive coating are within the limits recommended by the coating manufacturer.
   a. Apply coating after applying a Type III finish of concrete, or after thoroughly cleaning the concrete block.
   b. Apply coating at rate of 1 gal per 250 to 300 ft² (1 L per 6 to 7 m²). Apply three coats using a low-pressure spray.
   c. Begin the coating application at the uppermost surfaces and work down.
   d. Remove loose particles, dirt, grease, oil, and other foreign materials following application.

624.3.06 Quality Acceptance

The panels are subject to rejection if they fail to meet the requirements specified above. The following defects are also cause for rejection:

- Defects from imperfect mixing and casting
- Honeycombed or open texture
- Exposed reinforcement
- Failure to meet the required 3,500 psi (25 MPa) compressive strength at 28 days

624.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

624.4 Measurement

A. Clearing and Grubbing

Clearing and grubbing will not be measured separately for payment.

B. Excavation, Borrow, and Embankment

Excavation, borrow, and embankment are measured according to Section 205, Section 206, Section 208, or Section 210, as applicable.

The scope and dimensions of the work are as shown on the Plans.

C. Grassing

Grassing is not measured separately for payment unless shown on the Plans as a payment item. In this case, the work is measured according to the requirements of Section 700 for the type of grassing required.

D. Vine, Shrub, and Tree Planting

Vine, shrub, and tree planting shown on the Plans is measured according to Section 702.

E. Items Not Covered in This Specification

Items shown on the Plans but not covered in this Specification are measured for payment according to the applicable portions of the Specifications.

F. Walls

1. Type A Wall

   Concrete masonry wall constructed of concrete masonry units (blocks), complete in place, is measured in square feet (meters) of area from end to end and from top of footing to top of wall, including solid top block or solid cap block.

2. Type B Wall

   Steel wall is measured in square feet (meters) of wall surface installed before backfilling complete in place according to Subsection 109.01, "Measurement and Quantities." Posts, flashing, caps, concrete post embedment, or other incidental items required for construction are not measured separately.

3. Type C Wall

   Precast concrete sound barriers are measured in square feet (meters) of wall surface before backfilling, including pile flanges, complete in place and accepted.

   No separate measurement is made for pile, anchor bolts, plates, connections, neoprene bearing pads, connecting bolts, or other sound barrier components.

4. Type D Wall

   Treated timber walls are measured in square feet (meters) of wall surface installed before backfilling.

   No separate measurement is made for posts, caps, foundations, footings, hardware, timber treatment, pile, or cover boards.

5. Type E Wall

   Masonry-coated polystyrene reinforced panel walls are measured in square feet (meters) of wall surface installed before backfilling.

   No separate measurement is made for posts, flashing, concrete post embedment, or other incidental items required for construction.

6. Type F Wall

   Glass reinforced thermoset composite structural panel walls are measured in square feet (meters) of wall surface installed before backfilling.

   No separate measurement is made for posts, top caps, bottom caps, side caps, flashing, strip seals, mounting brackets and hardware, concrete post embedment, or other incidental items required for construction.

7. Type G Wall

   Precast autoclaved aerated concrete walls are measured in square feet (meters) of wall surface installed before backfilling.

   No separate measurement is made for steel supports or other incidental items required for construction.

8. All Walls

   The bottom of the barrier wall pay limit is the line located:

   - 6 in (150 mm) below the existing graded ground line when side barriers are not required
   - 6 in (150 mm) below the top of the side barriers when barriers are required
   - At the top of the retaining wall coping when the roadway is a cut section and the retaining wall is in place

   The top pay limit is the minimum profile elevation shown for each sound barrier profile.

624.4.01 Limits

General Provisions 101 through 150.

624.5 Payment

A. Clearing and Grubbing

The cost of clearing and grubbing is included in the Lump Sum Item for the Project. When clearing and grubbing is not shown as a payment Item, the cost is included in the overall Contract Price for the work covered in this Specification.

B. Unclassified Excavation and Borrow

Unclassified excavation and borrow will be paid for and included in the normal excavation and borrow for the Project unless shown on the Plans as a separate payment Item for sound barriers. In that case, payment will be made under Section 205, Section 206, Section 208, or Section 210, as applicable.

C. Grassing

Grassing will be paid for and is included in the normal grassing for the Project according to Section 700 unless shown on the Plans to be included in the price bid for sound barriers.

D. Vine, Shrub, and Tree Planting

When the Plans state that this Item will be paid for, payment will be made under Section 702.

E. Items Not Covered by This Specification

Items shown on the Plans to be paid for but are not covered by this Specification will be paid for according to the applicable portions of the Specifications.

F. Walls

Unless a specific wall type is specified in the Contract, identify in the Proposal which wall type will be used.

1. Type A Wall

   Concrete block walls will be paid for at the Contract Unit Price bid per square foot (meter). Payment includes but is not limited to:

   - Concrete blocks of the thickness shown on the Plans for the wall and pilasters
   - Plaster coat when required
   - Excavation for footings, concrete footings, and reinforcement when specified
   - Incidentals to complete the Item, including graffiti-proof coating

2. Type B Wall

   Steel wall will be paid for at the Contract Unit Price bid per square foot (meter). Payment is full compensation for furnishing and installing materials, providing post and post embedment, and providing labor, equipment, and incidentals to complete the Work.

3. Type C Wall

   Precast concrete sound barrier will be paid for at the Contract Unit Price bid per square foot (meter). Payment is full compensation for furnishing materials, including piling and attachments and for erecting the sound barrier, including graffiti-proof coating.

4. Type D Wall

   Treated timber wall will be paid for at the Contract Unit Price bid per square foot (meter). Payment is full compensation for furnishing materials including concrete and steel and for erecting the sound barrier.

5. Type E Wall

   Masonry-coated polystyrene reinforced panel walls will be paid for at the Contract Unit Price bid per square foot (meter). Payment is full compensation for furnishing and installing materials, including piling and attachments, and for erecting the sound barrier, including graffiti-proof coating.

6. Type F Wall

   Glass reinforced thermoset panel walls will be paid for at the Contract Unit Price bid per square foot (meter). Payment is full compensation for furnishing and installing materials, including post and post embedment, and for erecting the sound barrier.

7. Type G Wall

   Precast autoclaved aerated concrete sound barrier will be paid for at the Contract Unit Price bid per square foot (meter). Payment is full compensation for furnishing materials, including steel supports, and for erecting the sound barrier, including graffiti-proof coating

Additional wall payment criteria:

- Sound Barrier Type “A”

  When the height of Sound Barrier Type “A”, as measured from the top footing to the top of the wall including the solid top block or solid cap is not greater than 10 ft (3 m), payment is made under the 0 – 10 ft (0 – 3 m) Ht pay item. When the height is greater than 10 ft (3 m) but less than 20 ft (6 m), the entire panel will be paid for under the 10 – 20 ft (3 – 6 m) Ht pay item. When the height is greater than 20 ft (6 m) but less than 30 ft (9 m), the entire panel will be paid for under the 20 – 30 ft (6 – 9 m) Ht pay item.

- Sound Barrier Type “B”, “C”, “D”, “E”, “F”, and “G”

  These sound barriers utilize post supports. When the design height of the post is not greater than 10 ft (3 m), the entire height of the barrier is paid for under the 0 – 10 ft (0 – 3 m) Ht pay item. When the design height is greater than 10 ft (3 m) but less than 20 ft (6 m), the entire panel is paid for under the 10 – 20 ft (3 – 6 m) Ht pay item. When the design height is greater than 20 ft (6 m) but less than 30 ft (9 m), the entire panel is paid for under the 20 – 30 ft (6 – 9 m) Ht pay item.

  Payment will be made under:

Item No. 624	Sound barrier type ___, 0– 10 ft (0–3 m) Ht	Per square foot (meter).
Item No. 624	Sound barrier type ___, 10– 20 ft (3–6 m) Ht	Per square foot (meter).
Item No. 624	Sound barrier type ___, 20– 30 ft (6–9 m) Ht	Per square foot (meter).

624.5.01 Adjustments

General Provisions 101 through 150.

Section 626—Mechanically Stabilized Embankment Retaining Walls

626.1 General Description

This Specification covers the required materials, fabrication, construction, measurement, and payment for mechanically stabilized embankment retaining walls.

The scope of work of wall erection includes:

- Grading for wall construction
- Compacting the wall foundation
- General and local dewatering as necessary
- Constructing leveling pads
- Erecting precast panels
- Placing soil reinforcing devices
- Placing and compacting special embankment backfill within the reinforced volume
- Furnishing and placing precast or cast-in-place concrete coping and cast-in-place or precast traffic barrier on top of the wall if shown on the Plans

The wall foundation includes areas underlying the leveling pad and the reinforced volume. Ensure that items used to construct the mechanically stabilized embankment retaining walls but not mentioned in this Specification conform to the applicable Sections of the Standard Specifications.

Ensure that the architectural treatment of the precast panels is according to the Plan details.

For patented mechanically stabilized embankment retaining walls, obtain panels, soil reinforcing devices, connecting devices, joint materials, attachments, and expertise to construct the walls.

626.1.01 Definitions

Wall foundation—the area underlying the leveling pad and the reinforced volume.